

REMARKS

Claims 18 through 29 are currently pending in the present application. Claims 1 through 17 were withdrawn from further consideration as being drawn to a non-elected invention. Claims 18 through 24 have been rejected under 35 U.S.C. 102(e) as being anticipated by Margiott et al (US 6,984,464, hereinafter the '464 patent), while claims 25 through 29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the '464 patent in view of Reiser et al (US 2002/0076583, hereinafter the '583 publication).

Regarding independent claim 18, it is bedrock patent law that a rejection grounded on anticipation under 35 U.S.C. 102 is proper only where the subject matter claimed is identically disclosed or described in a reference. In other words, anticipation requires the presence of a single prior art reference which discloses each and every element of the claimed invention arranged as in the claim. *In re Arkley*, 172 U.S.P.Q. 524 (C.C.P.A. 1972). Thus, if the reference lacks even one of the recited features, it cannot be used to anticipate under the statute.

In the present case, the '464 patent lacks claim 18's recitation of an anode purge flowpath configured to selectively couple the recirculation loop to the anode. This feature is shown in FIGS. 2A through 2C of the original disclosure as purge valve **346** that clearly shows the conveyance of fluid from the recirculation loop **352** of cathode flowpath **350** to the anode flowpath **340**. At most, the '464 patent discloses a hydrogen transfer valve **64** (shown in the figure) that is used to "permit hydrogen fuel . . . to move into the cathode flow path", as described at column 3, lines 15 through 18. This feature of the '464 patent, which already reads on the "means for selectively introducing fuel into said recirculation loop" recitation in claim 18, in no way satisfies the limitation requiring a fluid coupling between the recirculation loop that serves as an anode purge flowpath. This is made manifest by the description of the '464 patent, where at column 9, lines 31 through 32, the Patentee unequivocally states that the hydrogen

transfer valve **64** (which is the only fluid link between the anode and cathode flowpaths) only permits fluid flow from the anode flowpath **24** to the cathode flowpath **38**.

In fact, such one-way flow of the hydrogen transfer valve **64** is entirely consistent with the objectives of the '464 patent and entirely inconsistent with the objectives of the claimed invention. Consistent with the '464 patent in that the stated objective is to achieve at least substantially pure hydrogen in both the anode and cathode flowpaths, as described at column 4, lines 14 through 20, and repeated at column 7, lines 11 through 21. Inconsistent with claim 18 in that it contains no provision for the introduction of an inert fluid (which, in one non-limiting example, may be a nitrogen-rich gas produced by the catalytic reaction of hydrogen and oxygen in the recirculation loop of the cathode flowpath) into the anode flowpath once the oxygen in the recirculation loop has been reacted to a sufficient degree to reduce a measured voltage to a predetermined level.

Thus, upon shutdown of the fuel cell system of the '464 patent, hydrogen flows from the anode flowpath to the cathode flowpath, and is used to substantially displace oxygen present in the cathode flowpath to achieve a measure of passivation. By contrast, the method of claim 18 relies upon the flow of hydrogen to the cathode flowpath to react with the oxygen therein to generate an inert fluid. It is through a purge line that fluidly connects this or another inert gas in the cathode flowpath to the anode flowpath that allows inert gas purging of both the anode and cathode of the fuel cell. This significant difference in the way the '464 patent achieves its shutdown objectives from that of the claimed invention cannot be reconciled by the '464 patent's lack of the two-way flow of fluid made possible by claim 18's recitation of the selective introduction means (for example, the inerting valve **344**) and anode purge flowpath that passes through purge valve **346**.

For all of the reasons discussed above, the Applicant respectfully submits that continued reliance upon the '464 patent as anticipatory of independent claim 18 is inappropriate, and that

Serial No. 10/780,488
Docket GP-304183

accordingly, claim 18 is in condition for allowance. Furthermore, since all of the claims that depend from claim 18 place further limits thereon, the Applicant is of the belief that they too are in condition for allowance.

Regarding dependent claims 25 through 29, the Examiner points out at page 5 of the present Office Action that the system of the '583 patent includes a conduit that provides air from the cathode flow path to the anode flow path from an oxygen source. In fact, the '583 patent relies on a fast purge of the anode with air out of necessity, as no cathode inerting (which is indicated by the claimed measured voltage reduction) is anywhere in evidence in the '583 patent. As such, the combination of the '583 patent and the '464 patent (which also fails to achieve the claimed cathode inerting) does not teach all of the aspects of the claims. MPEP 2143.03 clearly requires all aspects to be taught, so on that reason alone, the present combination is insufficient to make out a prima facie case for obviousness.

In addition to the reasons discussed above with regard to claims 18 through 24, the Applicant respectfully submits that the present rejection of claims 25 through 29 is improper, and that all of the claims are in condition for allowability. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

DINSMORE & SHOHL, L.L.P.

By /John D. Reed/
John D. Reed
Registration No. 46,506

One Dayton Centre
One South Main Street, Suite 1300
Dayton, Ohio 45402-2023

Serial No. 10/780,488
Docket GP-304183

Telephone: (937) 449-6453
Facsimile: (937) 449-6405

JDR